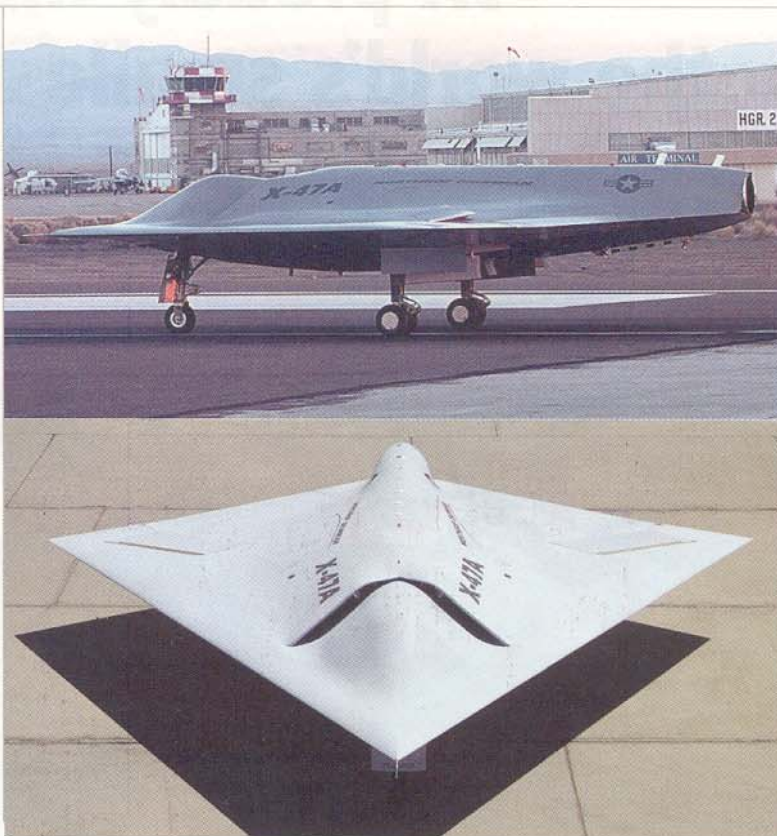


X-47A PEGASUS

On February 23, 2003, the Northrop Grumman X-47A Pegasus—an unmanned combat aerial vehicle proposed for use by the U.S. Navy aircraft-carrier fleet—made a successful first flight at Naval Air Warfare Center, China Lake, CA. The kite-shaped Pegasus is 27.9 feet long, spans 27.8 feet and is powered by a single, non-augmented 3,200-pound-thrust Pratt & Whitney JT15D-5C turbofan engine. The tailless X-47A relies on advanced autonomous flight-control to achieve its pitch, roll and yaw maneuvering throughout its entire flight envelope.

During its initial 12-minute test hop, the X-47A recovered at a predetermined touchdown point, whereby it simulated a landing on an aircraft-carrier-deck runway that featured an imaginary arresting cable, which it trapped dead-on.

The X-47A unmanned combat aerial vehicle (UCAV) was privately funded by the Integrated Systems Division of Northrop Grumman in El Segundo, CA, and designed in its Air Combat Systems section. Built by Scaled Composites in Mojave, CA, the Pegasus is important to both the Defense Advanced Research Projects Agency and the U.S. Navy as a proposed carrier-based UCAV for future employment. An operational X-47A would perform wartime Naval Suppression of Enemy Air Defense (SEAD) strike/surveillance missions. When and if a UCAV-N becomes operational, as many as 12 to 16 of



them would be employed in a carrier air wing to work with the U.S. Air Force's stealthy UCAVs based on Boeing's X-45A design. —Steve Pace

TINY FLYING ROBOTS

By now, it's pretty clear that the U.S. military is well aware of the benefits of RC technology. Unmanned aerial vehicles (UAVs) such as the Predator have become critical weapons in its growing arsenal of reconnaissance and intelligence-gathering resources. But aircraft that could perform similar surveillance operations in enclosed strategic locations such as offices, homes and, well, caves are a little harder to come by—but not for long.

Introducing the 10.6-inch-wingspan "Flapping-Wing Micro Air Vehicle" developed by professors Kevin Jones and Max Platzer of the Naval Postgraduate School in Monterey, CA. This tiny robotic bird represents

This miniature flying robot, called the "Flapping Wing Micro Air Vehicle," may just represent the future of military intelligence-gathering techniques.

a giant leap forward in the flapping-wing technology that has been

theorized about for centuries. Unlike most ornithopters (aircraft capable of imitating bird-like flight), which are highly susceptible to wind and tend to stall and even crash during low-speed flight, this miniature marvel can fly at extremely low speeds and maneuver around just about any obstacle.

Powered by the same type of S2 battery-driven motor as runs the vibrate function on a cell phone, this tiny flying robot features 3-channel control and is constructed of carbon fiber, balsa, tissue paper and plastic film. And because its twin biplane rear flappers actually draw air over the forward wings, providing lift at nearly any angle, the Flapping Wing Micro Air Vehicle is nearly stall-proof.

According to the Jones and Platzer, this miniature aircraft could conceivably carry tiny, microchip-size sensors, including cameras and radiation and motion detectors. The two have been working on this flapping-wing technology since 1994 and envision a day when hundreds of similar aircraft could be launched at a single time—a virtual swarm of surveillance to penetrate enemy bases.

With wonders of innovation like this on the horizon, it seems that modern intelligence-gathering technology is on the brink of a revolutionary transformation—one that shares more in common with our hobby than anyone could have ever imagined. We'll keep you posted! ☺



Professors Platzer and Jones take their revolutionary RC aircraft out for a stroll. The model seen here is the original 10-inch-wingspan, 2-channel version.

